

A batten

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Applicant: CSR LTD

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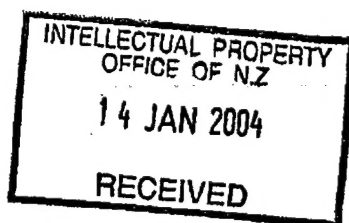
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Abstract of **NZ530605**

A batten (10) to be secured to a frame (11) by a threaded fastener (12). The batten is of a channeled configuration and includes a pair of longitudinally extending mounted flanges (17, 18) that are to be attached to the frame. Spaced from the flanges is a further flange (21) having flange portions (22, 23, 24) adapted to be sealingly attached to sheets (13, 14).

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PATENTS FORM 5
PATENTS ACT 1953
COMPLETE SPECIFICATION

Our Ref: 661200NZ
Dated: 12 January 2004

A Batten

We, CSR Limited, an Australian company, ACN 000 001 276 of Level 1, 9 Help Street, Chatswood, New South Wales 2067, Australia, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

Technical Field

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a pair of webs, each web extends between the further flange and a respective one of the mounting flanges so that the batten is of a channel configuration; and wherein

said further flange has a longitudinally extending recess defining portion longitudinally dividing said further flange into a first and a second longitudinally extending attachment flange portion to which the sheets are attached so that the sheets are separated by the recess portion, with the recess portion extending toward said common plane from the flange portions.

Preferably, the further flange has a further recess portion so that said further flange has a central flange portion separating the first and second flange portions, with the first and second flange portions each being separated from the central portion by a respective one of the recess portions.

Preferably, said common plane is a first plane, and said first and second portions and central portion are located in a second common plane, said second plane being generally parallel to and spaced from said first plane.

Preferably, said batten is formed from rolled sheet material.

Brief Description of the Drawings

A preferred form of the present invention will now be described by way of example with reference to the accompanying drawing which schematically depicts in sectioned elevation a batten to which two fibre cement sheets are secured.

Detailed Description of the Preferred Embodiments

In the accompanying drawing there is schematically depicted a batten 10. The batten 10 would be secured to a frame 11 by means of threaded fasteners 12 so that the batten 10 was generally vertically longitudinally extending.

The batten 10 secures fibre cement sheets 13 and 14 to the frame 11. The sheets 13 and 14 have edges 15 and 16 that are generally vertically oriented that would be joined in an appropriate manner.

The batten 10 is of a channel configuration and includes a pair of longitudinally extending mounting flanges 17 and 18 that are generally planar and located in a common plane 19. Each flange 17 and 18 has a longitudinally extending edge lip 20.

Transversely spaced from the frame 11 is a further flange 21. The further flange 21 includes a central flange portion 22 and two side flange portions 23 and 24. The flange portions 22, 23 and 24 are located in a common plane 25. The plane 25 is generally parallel to and transversely spaced from the plane 19. The flange portions 22, 23 and 24 are generally planar.

The further flange 21 is also provided with at least one recess defining portion 26. In this embodiment there are two portions 26. The portions 26 are provided by a pair of longitudinally extending webs 27 joined by an arcuate base 28. Each portion 26 extends from the portions 22, 23 and 24 toward the plane 19.

5 The sheets 13 and 14 are secured to the portions 23 and 24 by means of threaded fasteners 29. The edges 15 and 16 are located so as to be adjacent the central portion 21, with a gasket or seal strip 30 located between the edge portions of the sheets 13 and 14 and the central portion 21 so as to sealingly connect the sheets 13 and 14 to the batten 10.

10 The further flange 21 is attached to the flanges 17 and 18 by side webs 31. The side webs 31 are generally normal to the planes 19 and 25, with each side web 31 attaching a respective one of the web portions 23 and 24 with a respective one of the mounting flanges 17 and 18.

Preferably, the batten 10 is formed of sheet metal that is rolled to the configuration depicted.

15 In operation of the above described batten 10, dimensional changes of the sheets 13 and 14 are accommodated by elastic deformation of the webs 27 and 31.

CLAIMS:

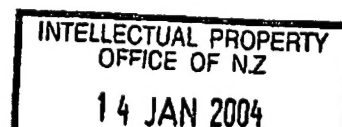
1. A batten to secure sheets to a support, said batten including:
a pair of longitudinally extending and transversely spaced mounting flanges which are to be secured to the support, said flanges being generally located in a common plane;
5 a further flange, said further flange being located between the mounting flanges and being provided for said sheets to be secured thereto;
a pair of webs, each web extends between the further flange and a respective one of the mounting flanges so that the batten is of a channel configuration; and wherein
10 said further flange has a longitudinally extending recess defining portion longitudinally dividing said further flange into a first and a second longitudinally extending attachment flange portion to which the sheets are attached so that the sheets are separated by the recess portion, with the recess portion extending toward said common plane from the flange portions.
- 15 2. The batten of claim 1 wherein, the further flange has a further recess portion so that said further flange has a central flange portion separating the first and second flange portions, with the first and second flange portions each being separated from the central portion by a respective one of the recess portions.
- 20 3. The batten of claim 1 or 2 wherein, said common plane is a first plane, and said first and second portions and central portion are located in a second common plane, said second plane being generally parallel to and spaced from said first plane.
4. The batten of claim 1 or 2 wherein, said batten is formed from rolled sheet material.
- 25 5. A batten substantially as hereinbefore described with reference to the accompanying drawings.

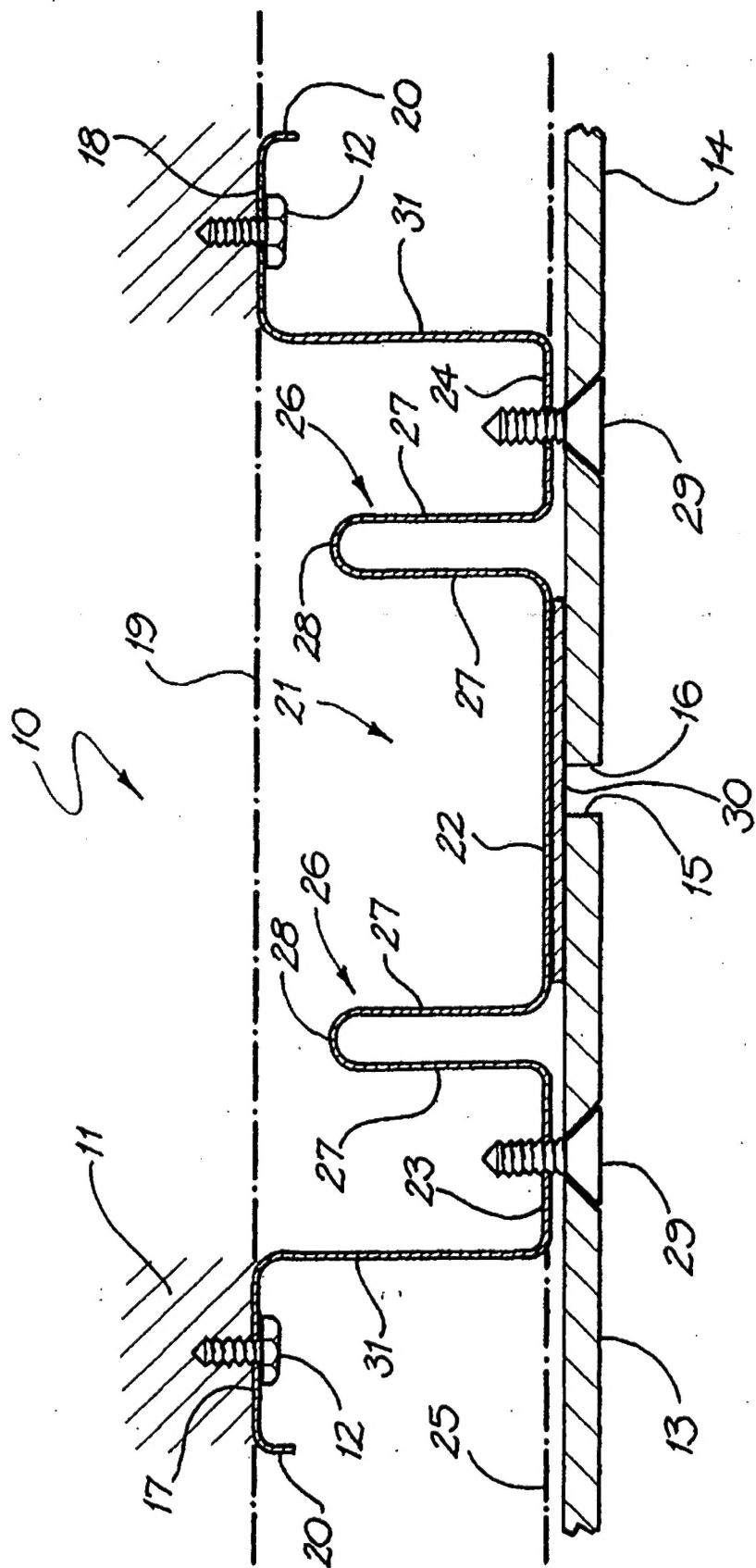
CSR Limited

By the Attorneys for the Applicant

SPRUSON & FERGUSON

Per: 





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Hollow interconnecting panels as lost formwork

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Inventor: DINCEL BURAK

Applicant: BURAK DINCEL

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- European: **E04B2/86F1; E04C2/20; E04C2/34**

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Priority number(s): AU2001PR08240 20011012; WO2002AU01382 20021010

Also published as:



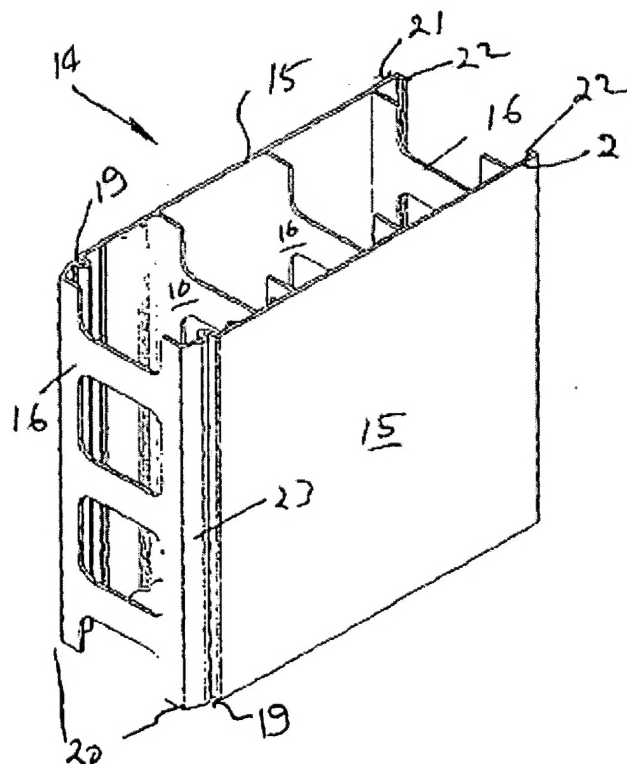
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Abstract of **NZ532182**

An elongated building element (14) to form a series of walls (10) to (13). The elements (14) each have longitudinally extending flanges (21) that snap engage with longitudinally extending grooves (19) in the next adjacent element (14). Accordingly the wall (10) is constructed by joining the elements (14) in a direction transverse their general direction of extension. If so required the elements (14) may be filled with concrete.



A BUILDING ELEMENT

Technical Field

The present invention relates to building elements and more particularly but not exclusively to building elements which are joined to form walls of a building.

Background of the Invention

5 It is known to form walls from building elements which are vertically extended extruded hollow members. Adjacent members are connected by cooperating flanges and grooves with the elements joined by longitudinal sliding relative movement. The elements are hollow and are subsequently filled with concrete to provide them with
10 strength and rigidity. Typically, the building elements are formed of extruded plastics material.

USA Patent 6212845 discloses a building element typically as described above. A wall is constructed by connecting adjacent elements by first connecting one element to a floor and then coupling subsequent elements thereto by vertically sliding relative
15 motion. A similar construction is also disclosed in USA Patents 6189269, 5974751, 5953880, 5729944 and 5706620.

The above discussed elements have a disadvantage in that their sliding relative movement for coupling purposes hinders their assembly. Their lengths makes them difficult to handle when being placed in position to form a wall.

20 A further disadvantage is that each element has either two male or two female coupling portions. Thus there is the need to manufacture and stock a variety of different elements.

Less relevant structures are described in USA Patents 3440785, 3555751, 3815311, 3828502, 4104837, 5274975, 5293728, 5404686 and 6247280.

Object of the Invention

25 It is the object of the present invention to overcome or substantially ameliorate the above disadvantage.

Summary of the Invention

There is disclosed herein a hollow elongated building element including:
30 a pair of longitudinally extending spaced side walls which are generally parallel and coextensive;
transverse webs joining the side walls; and wherein

said element has at least one longitudinally extending groove and at least one longitudinally extending flange, with the flange and groove being positioned and configured to engage a respective groove or flange of a like element to secure the elements together by snap engagement of the flange within its respective groove by movement transverse of the element.

Preferably, the element has a pair of grooves and a pair of flanges, with each groove being formed in a respective one of the side walls, and each flange being an extension of a respective one of the side walls.

Preferably, the grooves extend transversely inwardly from their respective side walls.

Preferably, the element includes a transverse web extending between the side walls to aid in stiffening the side walls.

Preferably, said transverse web includes a central flange joined to the side walls by means of pairs of end flanges that diverge from the central flange to the side walls so as to provide a longitudinally extending recess.

Preferably, a method of forming a structure from a plurality of building elements according to the above, said method including the steps of securing adjacent elements by relative movement therebetween in a direction transverse of the elements so that the flanges snap engage within adjacent grooves.

Brief Description of the Drawings

A preferred form of the present invention will now be described by way of example only with reference to the accompanying drawings wherein:

Figure 1 is a schematic perspective view of a building element;

Figure 2 is a schematic perspective view of a further building element to be used in conjunction with the building element of Figure 1;

Figure 3 is a schematic top plan view of a series of building walls formed with building elements such as the building elements of Figures 1 and 2;

Figure 4 is a schematic enlarged view of the portion 4 of the walls depicted in Figure 3;

Figure 5 is a schematic enlarged top plan view of the junction 5 of the walls of Figure 3; and

Figure 6 is a schematic enlarged top plan view of the corner 6 of the walls of Figure 3.

Figure 7 is a schematic perspective view of a modification of the building element of Figure 2; and

Figure 8 is a schematic end elevation of a coupling element employed with the building elements of Figures 1 to 7.

Detailed Description of the Preferred Embodiments

In the accompanying drawings there is schematically depicted a series of walls 10 to 13 of a building. Each of the walls 10 to 13 is formed of a plurality of building elements 14. In this respect it should be appreciated that each of the building elements 14 is elongated, but can be of any required transverse width. For example, in Figure 1 there is schematically depicted a modified element 14 which is wider.

The element 14 has two generally parallel coextensive side walls 15 joined by transverse webs 16. Typically, the webs 16 would have apertures 17. The elements 14 are hollow and receive concrete 18. Accordingly, the elements 14 provide a permanent formwork to receive the concrete 18. Typically, high slump concrete is poured into the assembled elements 14. Preferably, the elements 14 would be formed of extruded plastics material such as polyvinyl chloride so as to provide a permanent waterproof finish.

Each of the side walls 15 is provided with a longitudinally extending groove 19 adjacent a longitudinal edge 20 of the respective side wall 15. Extending from each side wall 15 is a longitudinally extending flange 21, the flanges 21 being generally parallel and coextensive with respect to the grooves 19. Each flange 21 includes a longitudinally extending lip 22 which is received within the grooves 19 of the next adjacent element 14. Extending to each groove 19 is a ramp surface 23.

When assembling the elements 14 adjacent elements 14 are moved in a transverse direction relative to each other, with the flanges 21 being resiliently urged apart by means of the surfaces 23. When the lips 22 are aligned with the grooves 19 they snap engage within the grooves 19 to retain adjacent elements 14 together. Accordingly, the flanges 21 extend between adjacent elements 14.

Typically, the walls 10 to 13 would be provided with end caps, such as the end caps 24. At junctions such as those illustrated in Figures 5 and 6, adjacent elements 14 not secured together by flanges 21 and associated grooves 19 may be secured together by other means such as adhesives and/or fasteners if so required. It should further be appreciated that the elements 14 may include bends such as the element 25 shown in Figure 3.

When constructing the walls 10 to 13 an installer would secure guide channels to associated floor and ceiling surfaces by means of adhesives or fasteners. The elements 14 are then placed in the tracks and transversely moved into engagement. Thereafter, the elements 14 may be filled with the concrete 18.

5 In the case of site concrete filled elements 14, the walls 10 to 13 can be poured either with the slab above or prior to the slab formwork of the level above.

The walls 10 to 13 may be load bearing or non-load bearing as required. Still further, if so required, reinforcing elements may pass longitudinally through the elements 14.

10 In Figure 7 there is schematically depicted a modification of the building elements 14. In this embodiment a transverse web 25 is provided to aid in stiffening the longitudinal side walls 15. More particularly the transverse web 25 has a central flange 26 joined to the walls 15 by means of diverging end flanges 27. The end flanges 27 diverge from the flange 26 toward the walls 15. The transverse web 25 enables the
15 flanges of walls 15 to be decreased in thickness relative to previous similar elements.

In Figure 7 the longitudinally extending recesses 28 can be used to duct service items such as electrical and communication cables.

In Figure 8 there is schematically depicted a coupling member 28. The coupling member 28 enables adjacent elements to be coupled in which the adjacent elements have
20 adjacent grooves 19 as opposed to grooves 19 and flanges 21. The member 28 has a central elongated web 29 and flanges 30 to snap engage in the grooves 19.

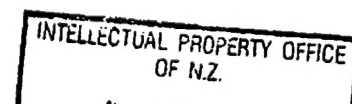
As can be seen from the element 14 of Figure 7, the aperture 17 maybe of an alternative configuration such as circular.

The claims defining the invention are as follows:-

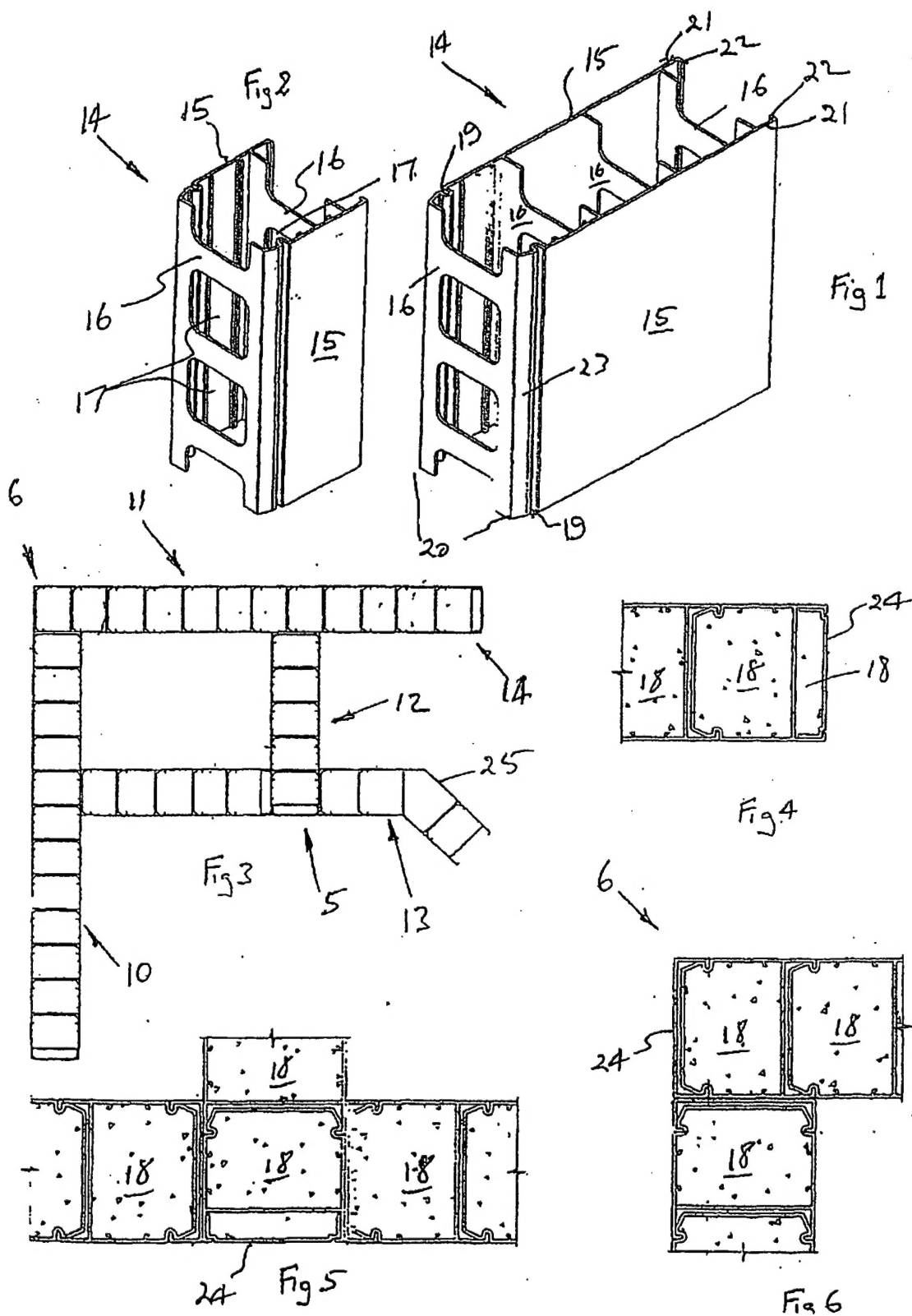
1. A hollow elongated building element including:
a pair of longitudinally extending spaced side walls which are generally parallel and coextensive;
5 transverse webs joining the side walls; and wherein
said element has at least one longitudinally extending groove and at least one longitudinally extending flange, with the flange and groove being positioned and configured to engage a respective groove or flange of a like element to secure the elements together by snap engagement of the flange within its respective groove by
10 movement transverse of the element.
2. The element of Claim 1, has a pair of grooves and a pair of flanges, with each groove being formed in a respective one of the side walls, and each flange being an extension of a respective one of the side walls.
3. The element of Claim 1 or 2, wherein grooves extend transversely
15 inwardly from their respective side walls.
4. The element of Claim 1, 2 or 3, further including a transverse web extending between the side walls to aide in stiffening the side walls.
5. The element of Claim 4, wherein said transverse web includes a central flange joined to the side walls by means of pairs of end flanges that diverge from the
20 central flange to the side walls so as to provide a longitudinally extending recess.
6. A method of forming a structure from a plurality of building elements according to any one of Claims 1 to 4, said method including the steps of securing adjacent elements by relative movement therebetween in a direction transverse of the elements so that the flanges snap engage within adjacent grooves.
- 25 7. A hollow elongated building element substantially as hereinbefore described with reference to Figure 1, Figure 2 or Figure 3 of the accompanying drawings.
8. A wall having a plurality of building elements according to any one of Claims 1 to 5 and 7, wherein adjacent elements have engaged flanges and grooves.

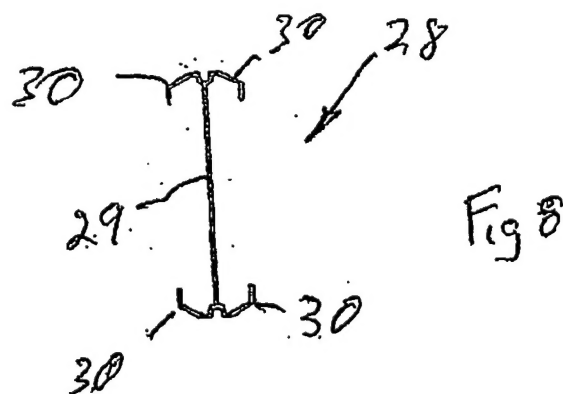
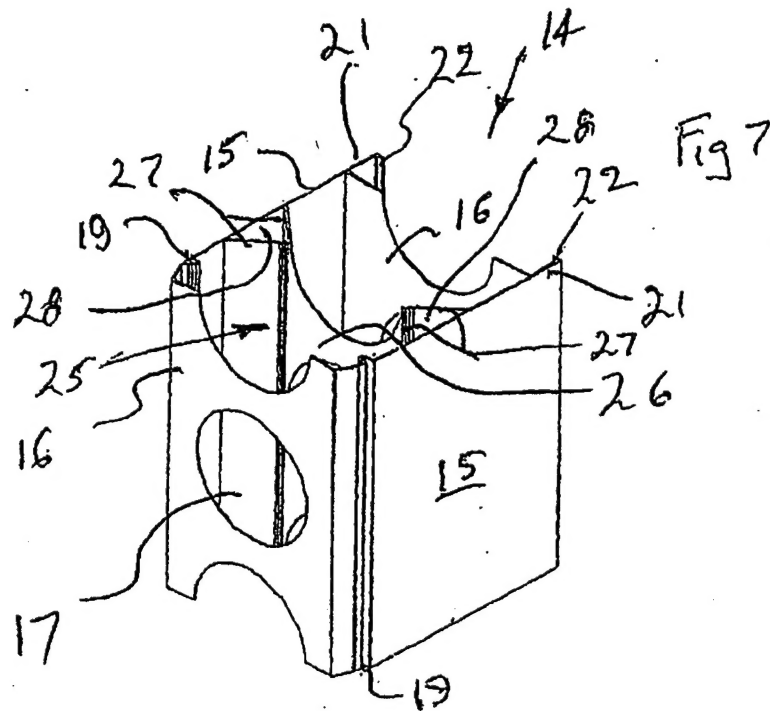
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